



Valid from 2026.HS

Module description: Data Science Fundamentals			
Module Code	t.BA.DS.DSG.20HS		
ECTS Credits	4		
Language of Instruction/Examination	German		
Organizational Unit	IDS		
Module Coordinator	Manuel Dömer		
Legal Framework	The module description is part of the legal basis in addition to the general academic regulations. It is binding. During the first week of the semester a written and communicated supplement can specify the module description in more detail.		
Module Characteristic	Type 3f 2 asynchronous lessons per semester week for each yearly starting-class + 2 weekly lab lessons per semester week in half-class groups		
Module Description	The course provides an introduction into the fundamental aspects of the data science practice. The students develop an understanding for the technical, ethical and legal challenges in the development of data products. The concepts are implemented in practical use cases.		
Module Content	<ul style="list-style-type: none"> The students learn the fundamental aspects and the corresponding challenges in the development of data products. They collect first experiences in the incremental procedure consisting of * Project understanding * Data acquisition and exploration * Modelling * Evaluation * Deployment and integration of the product The concepts are applied in an accompanying project. The practical work involves basic analytics tools, such as text editor Microsoft Excel, and a No Code-environment for machine learning applications. Furthermore, the course covers ethical and legal challenges associated with the processing of data and the development of data products. 		
Prerequisite Knowledge	Basic knowledge of maths and logical thinking is required, but no programming experience.		
Learning Objectives (Competencies)	Students...	Competencies	Taxonomies
	develop a fundamental understanding of the development of data products.	F, M	K1, K2
	reflect and discuss ethical questions around data products.	M, F	K3, K4, K5, K6
	understand the fundamental principles of intangible property rights and data protection and how they affect the development of data products.	M, F	K1, K2, K3, K4
	apply the individual phases of the development process to given problem statements.	F, M	K2, K3

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Performance Assessment	End-of-module exam	Assessment	Length (min.)	Weighting	Social Form	Scenario/Format
	written exam	Grade	90	80%	acc. to module agreement	
Classroom Attendance Requirement	None					
Learning material	<ul style="list-style-type: none"> Lecture notes and slides 					